10/660,738

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	142	(substrate or support) NEAR4 mercapto	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 12:05
S2	22	S1 and sulfonate	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 12:09
S3	17	S2 and link$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 12:09
S4	12	S3 and hetero$8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 13:12
S5	2	("5563056").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2005/11/16 13:14
S15	3	"2001083515"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 14:20
S16	1	WO adj "200183515"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 14:34
S17	4	"6572767"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/16 14:34

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L4	19	bifunctional adj (linker or reagent) same (mercapto or mercapto$1containing)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:08
L7	6	l4 and epoxide	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:21
L8	3	linker NEAR mercapto same epoxide	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:11
L9	44	mercapto NEAR2 polyethylene	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:22
L10	14	mercapto NEAR1 polyethylene	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:41
L11	279	tubular and 422/70;436/161-162.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:44
L12	155	l11 and inlet and outlet	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:44
L13	6	l12 and (porous adj membrane)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:46

L14	98	l12 and (bed or bead$1 or particle$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 08:02
L15	0	composite adj chromatography same (fluid adj control)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:57
L16	15	composite adj chromatography	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 07:57
L17	4	l14 and fluid adj control	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/11/17 08:02

10/660,738

Connecting via Winsock to STN

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LOGINID:SSSPTASXH1641

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	JUL 20	Powerful new interactive analysis and visualization software, STN AnaVist, now available
NEWS	4	AUG 11	STN AnaVist workshops to be held in North America
NEWS	5	AUG 30	CA/CAplus -Increased access to 19th century research documents
NEWS	6	AUG 30	CASREACT - Enhanced with displayable reaction conditions
NEWS	7	SEP 09	ACD predicted properties enhanced in REGISTRY/ZREGISTRY
NEWS	8	OCT 03	MATHDI removed from STN
NEWS	9	OCT 04	CA/CAplus-Canadian Intellectual Property Office (CIPO) added to core patent offices
NEWS	10	OCT 06	STN AnaVist workshops to be held in North America
NEWS	11	OCT 13	New CAS Information Use Policies Effective October 17, 2005
NEWS	12	OCT 17	STN(R) AnaVist(TM), Version 1.01, allows the export/download of CAplus documents for use in third-party analysis and visualization tools
NEWS	13	OCT 27	Free KWIC format extended in full-text databases
NEWS	14	OCT 27	DIOGENES content streamlined
NEWS	15	OCT 27	EPFULL enhanced with additional content
NEWS	16	NOV 14	CA/CAplus - Expanded coverage of German academic research

NEWS EXPRESS	JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
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* * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 13:26:34 ON 16 NOV 2005

=>
Uploading
THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE

Do you want to switch to the Registry File?
Choice (Y/n):
Switching to the Registry File...
Some commands only work in certain files. For example, the EXPAND command can only be used to look at the index in a file which has an index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of commands which can be used in this file.

=> FILE REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 13:26:45 ON 16 NOV 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 15 NOV 2005 HIGHEST RN 868125-94-4
DICTIONARY FILE UPDATES: 15 NOV 2005 HIGHEST RN 868125-94-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
****

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=>
Uploading C:\Program Files\Stnexp\Queries\10660738.str

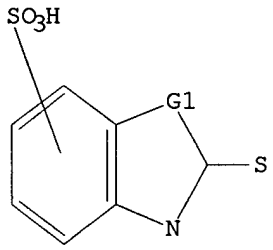
chain nodes :
11 13
ring nodes :
1 2 3 4 5 6 7 8 9
chain bonds :
5-11
ring bonds :
1-2 1-7 2-3 3-4 4-8 5-6 5-9 6-7 7-8 8-9
exact/norm bonds :
5-6 5-9 5-11 6-7 8-9
normalized bonds :
1-2 1-7 2-3 3-4 4-8 7-8
isolated ring systems :
containing 1 :

G1:O,S,N

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 11:CLASS
13:CLASS 14:CLASS

L1 STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1 STR



G1 O,S,N

Structure attributes must be viewed using STN Express query preparation.

=> s l1
SAMPLE SEARCH INITIATED 13:27:00 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 92 TO ITERATE

100.0% PROCESSED 92 ITERATIONS 7 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 1265 TO 2415
PROJECTED ANSWERS: 7 TO 298

L2 7 SEA SSS SAM L1

=> s l2 sss full
FULL SEARCH INITIATED 13:27:15 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 1663 TO ITERATE

```
100.0% PROCESSED     1663 ITERATIONS                          169 ANSWERS
SEARCH TIME: 00.00.01

L3          169 SEA SSS FUL L1

=> s l1 sss full
FULL SEARCH INITIATED 13:27:22 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -     1663 TO ITERATE

100.0% PROCESSED     1663 ITERATIONS                          169 ANSWERS
SEARCH TIME: 00.00.01

L4          169 SEA SSS FUL L1

=> FIL CAPLUS
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               322.23     322.44

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FILE LAST UPDATED: 15 Nov 2005  (20051115/ED)

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=> s l3
L5          367 L3

=> s l3 and (chromatography or column)
           367 L3
        306573 CHROMATOGRAPHY
           154 CHROMATOGRAPHIES
        306685 CHROMATOGRAPHY
                  (CHROMATOGRAPHY OR CHROMATOGRAPHIES)
        601257 CHROMATOG
          3297 CHROMATOGS
        603643 CHROMATOG
                  (CHROMATOG OR CHROMATOGS)
        695833 CHROMATOGRAPHY
                  (CHROMATOGRAPHY OR CHROMATOG)
        389806 COLUMN
        101241 COLUMNS
        439619 COLUMN
                  (COLUMN OR COLUMNS)
```

L6 2 L3 AND (CHROMATOGRAPHY OR COLUMN)

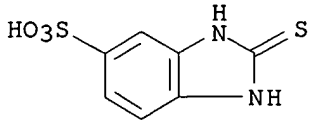
=> d l6 ibib abs hitstr tot

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:146993 CAPLUS
DOCUMENT NUMBER: 142:351638
TITLE: Capture of a monoclonal antibody and prediction of separation conditions using a synthetic multimodal ligand attached on chips and beads
AUTHOR(S): Brenac, Virginie; Ravault, Vincent; Santambien, Patrick; Boschetti, Egisto
CORPORATE SOURCE: BioSepra, BioSepra, Process Proteomics, Division of Ciphergen Biosystems Inc., Cergy Pontoise, 95804, Fr.
SOURCE: Journal of Chromatography, B: Analytical Technologies in the Biomedical and Life Sciences (2005), 818(1), 61-66
CODEN: JCBAAI; ISSN: 1570-0232
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A synthetic ligand called 2-mercapto-5-benzimidazolesulfonic acid has been successfully used for the specific **chromatog.** capture of antibodies from a cell culture supernatant. Adsorption occurred at physiol. ionic strength and pH range between 5.0 and 6.0, with some binding capacity variations within this pH range: antibody uptake increased when the pH decreased. With very dilute feedstocks, as was the case with the cell culture supernatant under investigation, it was found that the pH had to be slightly lowered to get a good antibody sorption capacity. To optimize separation conditions, a preliminary study was made using ProteinChip Arrays that displayed the same chemical functionalities as the resin. Arrays were analyzed using SELDI-MS. By this mean, it was possible to cross-over simultaneously different pH conditions at the adsorption and the desorption steps. Best conditions were implemented for preparative separation using regular lab-scale **columns**. At pH 5.2, antibody adsorption was not complete, while at pH 5.0 the antibody was entirely captured. pH 9 was selected at elution, rather than pH 8.0 or 10.0, and resulted in a complete desorption of antibodies from the **column**. Benefits of the prediction of separation conditions of antibodies on MBI beads using SELDI-MS were a significant reduction in anal. time and in sample volume This was possible because the separation of IgG on the chip surface did mimic very well the separation on beads.

IT **58089-27-3**, 2-Mercapto-5-benzimidazolesulfonic acid
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(capturing ligand; capture of a monoclonal antibody and prediction of separation conditions using synthetic multimodal ligand attached on chips and beads)

RN 58089-27-3 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)

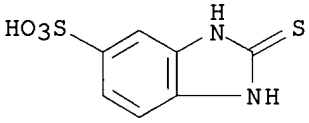


REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:540175 CAPLUS
DOCUMENT NUMBER: 141:187294
TITLE: 2-Mercapto-5-benzimidazolesulfonic acid: an effective multimodal ligand for the separation of antibodies
AUTHOR(S): Girot, Pierre; Averty, Emmanuelle; Flayeux, Isabelle; Boschetti, E.
CORPORATE SOURCE: BioSepra s.a., Ciphergen Biosystems, Cergy Pontoise, 95800, Fr.
SOURCE: Journal of Chromatography, B: Analytical Technologies in the Biomedical and Life Sciences (2004), 808(1), 25-33
CODEN: JCBAAI; ISSN: 1570-0232
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The report describes the use of 2-mercapto-5-benzimidazolesulfonic acid (MBISA) as a ligand for the separation of antibodies by **chromatog.** The ligand shows a relatively specific adsorption property for antibodies from very crude biologicals at pH 5.0-5.5. At this pH range most of other proteins do not interact with the resin especially when the ionic strength is similar to physiol. conditions. Several characterization studies are described such as antibody adsorption in different conditions of ionic strength, pH and temperature These properties are advantageously used to selectively capture antibodies from very crude feed stocks without dilution or addition of lyotropic salts. Demonstration was made that the adsorption mechanism is neither based on ion exchange nor on hydrophobic assocns., but rather as an assembly of a variety of properties of the ligand itself. Binding capacity in the described conditions ranges between 25 and 30 mg/mL of resin. The sorbent does not co-adsorb albumin (Alb) and seems compatible with a large variety of feedstocks. Quant. antibody desorption occurs when the pH is raised above 8.5. The final purity of the antibody depends on the nature of the feedstock, and can reach levels of purity as high as 98%. Even with very crude biol. liqs. such as ascites fluids, cell culture supernatants and Chon fraction II + III from human plasma fractionation where the number of protein impurities is particularly large, Igs G (IgG) were separated at high purity level in a single step.

IT **58089-27-3**, 2-Mercapto-5-benzimidazolesulfonic acid
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(2-Mercapto-5-benzimidazolesulfonic acid multimodal ligand for separation of antibodies)
RN 58089-27-3 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)

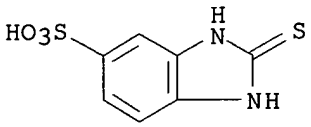


REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s l5 and (chromatography or column)
306573 CHROMATOGRAPHY
154 CHROMATOGRAPHIES
306685 CHROMATOGRAPHY
(CHROMATOGRAPHY OR CHROMATOGRAPHIES)
601257 CHROMATOG

```
          3297 CHROMATOGS
        603643 CHROMATOG
                 (CHROMATOG OR CHROMATOGS)
        695833 CHROMATOGRAPHY
                 (CHROMATOGRAPHY OR CHROMATOG)
        389806 COLUMN
        101241 COLUMNS
        439619 COLUMN
                 (COLUMN OR COLUMNS)
L7           2 L5 AND (CHROMATOGRAPHY OR COLUMN)

=> dup rem l6 l7
PROCESSING COMPLETED FOR L6
PROCESSING COMPLETED FOR L7
L8           2 DUP REM L6 L7 (2 DUPLICATES REMOVED)
               ANSWERS '1-2' FROM FILE CAPLUS

=> s l5 and (support or substrate)
        430783 SUPPORT
        120628 SUPPORTS
        511920 SUPPORT
                 (SUPPORT OR SUPPORTS)
        833071 SUBSTRATE
        382138 SUBSTRATES
       1040456 SUBSTRATE
                 (SUBSTRATE OR SUBSTRATES)
L9         122 L5 AND (SUPPORT OR SUBSTRATE)

=> s l9 and column
        389806 COLUMN
        101241 COLUMNS
        439619 COLUMN
                 (COLUMN OR COLUMNS)
L10          0 L9 AND COLUMN

=> s l9 and solid (support or substrate)
MISSING OPERATOR 'SOLID (SUPPORT'
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l9 and solid
        988083 SOLID
        278028 SOLIDS
       1193478 SOLID
                 (SOLID OR SOLIDS)
L11          0 L9 AND SOLID

=> s l5 and (chromatograph? or column?)
        397385 CHROMATOGRAPH?
        601257 CHROMATOG
          3297 CHROMATOGS
        603643 CHROMATOG
                 (CHROMATOG OR CHROMATOGS)
        744364 CHROMATOGRAPH?
                 (CHROMATOGRAPH? OR CHROMATOG)
        456952 COLUMN?
L12          2 L5 AND (CHROMATOGRAPH? OR COLUMN?)

=> s l5 and (plate or slide)
        324869 PLATE
        214239 PLATES
        458445 PLATE
                 (PLATE OR PLATES)
```

```
         16229 SLIDE
         11009 SLIDES
         25250 SLIDE
                 (SLIDE OR SLIDES)
L13         30 L5 AND (PLATE OR SLIDE)

=> l13 and cellulose
L13 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l13 and cellulose
        331835 CELLULOSE
          4219 CELLULOSES
        332317 CELLULOSE
                 (CELLULOSE OR CELLULOSES)
L14          1 L13 AND CELLULOSE

=> d l14 ibib abs hitstr tot

L14  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:         1993:23861  CAPLUS
DOCUMENT NUMBER:          118:23861
TITLE:                    Anticorrosive dampening water compositions for
                          lithographic printing apparatus
INVENTOR(S):              Matsumoto, Hiroshi; Kunichika, Kenji; Uchida, Toshio
PATENT ASSIGNEE(S):       Fuji Photo Film Co., Ltd., Japan
SOURCE:                   Can. Pat. Appl., 31 pp.
                          CODEN: CPXXEB
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.          DATE
     ---------------      ----   --------    --------------------     --------
     CA 2053554            AA    19920426    CA 1991-2053554          19911016
     US 5165344            A     19921124    US 1991-780202           19911022
PRIORITY APPLN. INFO.:                       JP 1990-288244      A    19901025
OTHER SOURCE(S):          MARPAT 118:23861
AB   Title compns. contain hydrophilic film-forming polymers, pH buffers, and
     benzimidazole derivs.  Thus, an aqueous composition containing gum arabic
0.015,
     Mg(NO3)2 0.3, H3PO4 0.13, monoammonium citrate 0.13, benzimidazole 0.003,
     and iso-PrOH 10% was adjusted with KOH to pH 5.0-5.5 and showed good
     anticorrosion on Cu, brass, steel, and (ni-plated) cast iron.  Lithog.
     printing with the use of the composition as dampening water gave a ≥104
     smudge-resistant copies and no contamination to the metering rolls.
IT   53918-03-9, Sodium 2-mercaptobenzimidazole-5-sulfonate
     RL: USES (Uses)
        (dampening water compns. containing, anticorrosive, for lithog.
        plates)
RN   53918-03-9  CAPLUS
CN   1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo-, monosodium salt
     (9CI)  (CA INDEX NAME)
```



● Na

```
=> s l5 and separation
        187870 SEPARATION
          7143 SEPARATIONS
        193825 SEPARATION
                  (SEPARATION OR SEPARATIONS)
        556145 SEPN
         36053 SEPNS
        574381 SEPN
                  (SEPN OR SEPNS)
        626833 SEPARATION
                  (SEPARATION OR SEPN)
L15          5 L5 AND SEPARATION

=> d l15 ibib abs hitstr tot

L15  ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:         2005:146993  CAPLUS
DOCUMENT NUMBER:          142:351638
TITLE:                    Capture of a monoclonal antibody and prediction of
                          separation conditions using a synthetic
                          multimodal ligand attached on chips and beads
AUTHOR(S):                Brenac, Virginie; Ravault, Vincent; Santambien,
                          Patrick; Boschetti, Egisto
CORPORATE SOURCE:         BioSepra, BioSepra, Process Proteomics, Division of
                          Ciphergen Biosystems Inc., Cergy Pontoise, 95804, Fr.
SOURCE:                   Journal of Chromatography, B: Analytical Technologies
                          in the Biomedical and Life Sciences (2005), 818(1),
                          61-66
                          CODEN: JCBAAI; ISSN: 1570-0232
PUBLISHER:                Elsevier B.V.
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
```

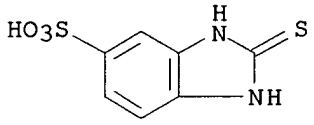
AB A synthetic ligand called 2-mercapto-5-benzimidazolesulfonic acid has been successfully used for the specific chromatog. capture of antibodies from a cell culture supernatant. Adsorption occurred at physiol. ionic strength and pH range between 5.0 and 6.0, with some binding capacity variations within this pH range: antibody uptake increased when the pH decreased. With very dilute feedstocks, as was the case with the cell culture supernatant under investigation, it was found that the pH had to be slightly lowered to get a good antibody sorption capacity. To optimize **separation** conditions, a preliminary study was made using ProteinChip Arrays that displayed the same chemical functionalities as the resin. Arrays were analyzed using SELDI-MS. By this mean, it was possible to cross-over simultaneously different pH conditions at the adsorption and the desorption steps. Best conditions were implemented for preparative **separation** using regular lab-scale columns. At pH 5.2, antibody adsorption was not complete, while at pH 5.0 the antibody was entirely captured. pH 9 was selected at elution, rather than pH 8.0 or 10.0, and resulted in a complete desorption of antibodies from the column. Benefits

of the prediction of **separation** conditions of antibodies on MBI beads using SELDI-MS were a significant reduction in anal. time and in sample volume This was possible because the **separation** of IgG on the chip surface did mimic very well the **separation** on beads.

IT **58089-27-3**, 2-Mercapto-5-benzimidazolesulfonic acid
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(capturing ligand; capture of a monoclonal antibody and prediction of **separation** conditions using synthetic multimodal ligand attached on chips and beads)

RN 58089-27-3 CAPLUS

CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:540175 CAPLUS

DOCUMENT NUMBER: 141:187294

TITLE: 2-Mercapto-5-benzimidazolesulfonic acid: an effective multimodal ligand for the **separation** of antibodies

AUTHOR(S): Girot, Pierre; Averty, Emmanuelle; Flayeux, Isabelle; Boschetti, E.

CORPORATE SOURCE: BioSepra s.a., Ciphergen Biosystems, Cergy Pontoise, 95800, Fr.

SOURCE: Journal of Chromatography, B: Analytical Technologies in the Biomedical and Life Sciences (2004), 808(1), 25-33
CODEN: JCBAAI; ISSN: 1570-0232

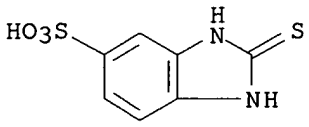
PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The report describes the use of 2-mercapto-5-benzimidazolesulfonic acid (MBISA) as a ligand for the **separation** of antibodies by chromatog. The ligand shows a relatively specific adsorption property for antibodies from very crude biologicals at pH 5.0-5.5. At this pH range most of other proteins do not interact with the resin especially when the ionic strength is similar to physiol. conditions. Several characterization studies are described such as antibody adsorption in different conditions of ionic strength, pH and temperature These properties are advantageously used to selectively capture antibodies from very crude feed stocks without dilution or addition of lyotropic salts. Demonstration was made that the adsorption mechanism is neither based on ion exchange nor on hydrophobic assocns., but rather as an assembly of a variety of properties of the ligand itself. Binding capacity in the described conditions ranges between 25 and 30 mg/mL of resin. The sorbent does not co-adsorb albumin (Alb) and seems compatible with a large variety of feedstocks. Quant. antibody desorption occurs when the pH is raised above 8.5. The final purity of the antibody depends on the nature of the feedstock, and can reach levels of purity as high as 98%. Even with very crude biol. liqs. such as ascites fluids, cell culture supernatants and Chon fraction II + III from human plasma fractionation where the number of protein impurities is particularly large, Igs G (IgG) were separated at high purity level in a single step.

IT **58089-27-3**, 2-Mercapto-5-benzimidazolesulfonic acid
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(2-Mercapto-5-benzimidazolesulfonic acid multimodal ligand for **separation** of antibodies)
RN 58089-27-3 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:816695 CAPLUS
DOCUMENT NUMBER: 135:354990
TITLE: Simulated activity of protein A displayed by ligands attached to a cellulose bead surface for affinity purification of proteins
INVENTOR(S): Stipanovic, Bozidar; Griffin, Martin; Scarpa, Ioannis
PATENT ASSIGNEE(S): Accurate Polymers, Inc., USA
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001083515	A2	20011108	WO 2001-US13970	20010430
WO 2001083515	A3	20020704		
W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2407276	AA	20011108	CA 2001-2407276	20010430
US 2001045384	A1	20011129	US 2001-846471	20010430
US 6572767	B2	20030603		
EP 1276557	A2	20030122	EP 2001-932794	20010430
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003209491	A1	20031113	US 2003-410531	20030408
US 6919021	B2	20050719		

PRIORITY APPLN. INFO.:
US 2000-200591P P 20000428
US 2001-846471 A3 20010430
WO 2001-US13970 W 20010430

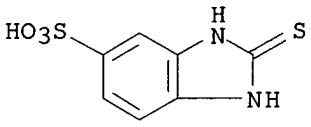
AB A method and compound for the purification of proteins includes the attachment to a support matrix of a non-peptidic, small compound which simulates the affinity of protein A for Igs. Once attached on the support matrix, the resulting monochloro-triazine derivative is reacted with an excess of an amino

compound at a higher temperature to achieve high levels of substitution. The resulting support matrix with ligand is useful in the affinity **sepns.** of antibodies. Further, a mercapto heterocyclic system ligand may be attached to the super matrix and is useful in affinity **sepns.** of antibodies. Orbicell beads having a primary or secondary amino group were reacted with triepoxide and then with thioimidazol to make beads for isolating IgY from egg yolk.

IT **53918-03-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(simulated activity of protein A displayed by ligands attached to cellulose bead surface for affinity purification of proteins)

RN 53918-03-9 CAPLUS

CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo-, monosodium salt (9CI) (CA INDEX NAME)



● Na

L15 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1987:544829 CAPLUS
DOCUMENT NUMBER: 107:144829
TITLE: Silver salt diffusion-transfer reversal process
INVENTOR(S): De Keyzer, Rene Maria; Vermeulen, Leon Louis; Pollet, Robert Joseph
PATENT ASSIGNEE(S): Agfa-Gevaert N. V., Belg.
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 218753	A1	19870422	EP 1985-201654	19851010
EP 218753	B1	19890809		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 62098350	A2	19870507	JP 1986-240163	19861008
JP 2515110	B2	19960710		
US 4720447	A	19880119	US 1986-917107	19861009
PRIORITY APPLN. INFO.:			EP 1985-201654 A	19851010

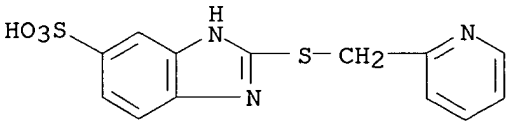
GI For diagram(s), see printed CA Issue.

AB Image transfer in the photog. Ag salt diffusion-transfer reversal process is carried out in the presence of ≥1 heterocyclic azole compound of the general formula I or II (A = atoms for forming a heterocycle; Z = a chemical bond, SmZ1Z2n where Z1 = (substituted) alkylene, arylene, alkenylene; Z2 = S, Se, NR1 where R1 = H, alkyl; m, n = 0, 1; R = alkyl, alkenyl, aryl, heterocyclyl). The azole compound may be contained in an image-receiving layer and/or in an alkaline processing solution and affects the d. and tone of the transferred images. Thus, a polyethylene-laminated paper support was coated with a AgCl emulsion layer, overcoated with a top layer from a composition of H2O, hydroxyethylated starch, EtOH, 1-phenyl-3-pyrazolidone, hydroquinone, and HCHO, imagewise exposed,

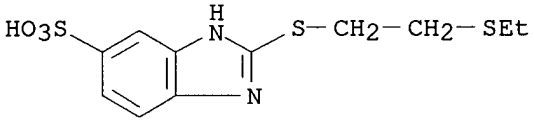
moistened with a processing solution containing Na3PO4, Na2SO3, and Na2S2O3 and contacted with an image-receiving sheet coated with a composition containing gelatin, Ag2S/Ni sulfide development nuclei, saponin, HCHO, iso-C8H17-p-C6H4O(CH2CH2O)8CH2CO2Na, and 2-nonyl-5-sulfobenzimidazole (III). After **separation** of the contacting elements, the transmission d., the saturation d., and the reflection d. of the transferred images on the receptor were 3.01, 1.94, and 1.82, resp., vs. 3.35, 1.65, and 1.49, resp., for a control containing no III.

IT **28020-71-5**, 2-(2-Pyridylmethylthio)-5-sulfobenzimidazole
29490-12-8, 2-(2-Ethylthioethylthio)-5-sulfobenzimidazole
88580-45-4, 2-(2-Dimethylaminoethylthio)-5-sulfobenzimidazole sodium salt **110537-49-0**, Bis[2-(5-sulfo-2-benzimidazolylthio)ethyl]sulfide
RL: DEV (Device component use); USES (Uses)
(diffusion-transfer photog. films containing, for improved image d. and tone)

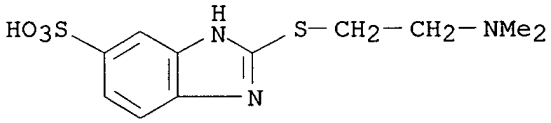
RN 28020-71-5 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2-[(2-pyridinylmethyl)thio]- (9CI) (CA INDEX NAME)



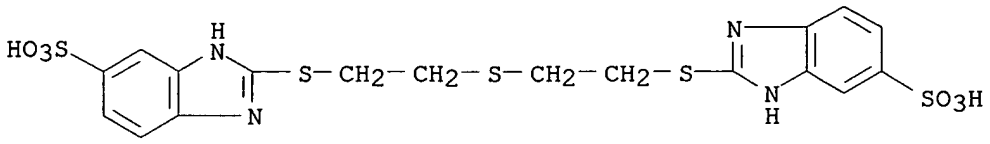
RN 29490-12-8 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2-[[2-(ethylthio)ethyl]thio]- (9CI) (CA INDEX NAME)



RN 88580-45-4 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2-[[2-(dimethylamino)ethyl]thio]-, monosodium salt (9CI) (CA INDEX NAME)



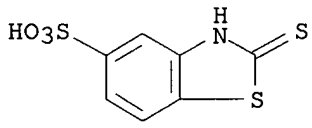
RN 110537-49-0 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2,2'-[thiobis(2,1-ethanediylthio)]bis- (9CI) (CA INDEX NAME)



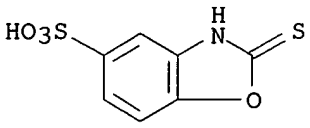
L15 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1976:52085 CAPLUS
DOCUMENT NUMBER: 84:52085
TITLE: Photographic color diffusion-transfer material
INVENTOR(S): Matsuyama, Junichi; Ishiguro, Shoji; Adachi, Keiichi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Ger. Offen., 63 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2457896	A1	19750612	DE 1974-2457896	19741206
JP 50089034	A2	19750717	JP 1973-139234	19731207
GB 1475769	A	19770610	GB 1974-52922	19741206

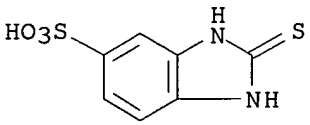
PRIORITY APPLN. INFO.: JP 1973-139234 A 19731207
GI For diagram(s), see printed CA Issue.
AB The addition of a thiol or thione (I and II, resp.; R = H, CO2H, SO3H, Cl; R1 = H, CO2H, SO3H; R2 = H, alkoxycarbonyl, carboxymethyl, benzyl, cyclohexylamino, NH2COCH2; R3 = ethoxycarbonyl, CO2H, NaSO3; R4 = Me, PhCH2; Z = NH, NMe, O, S, Se) to preferably all of the emulsion layers of a pos. diffusion-transfer photog. material gives color images of increased d., improved **separation**, and improved reproducibility. Thus, the addition of I (R = CO2H; R1, R2 = H) at 1.22 g/mole Ag halide to the blue-sensitive emulsion layer of a color pos. diffusion-transfer photog. frilm gave, after processing in combination with an image-receptor sheet, cyan, magenta, and yellow d. values of 2.41, 2.27, and 2.30, resp., for a fresh film; 2.40, 2.25, and 2.25, resp., for a film stored 1 month at room temperature; and 2.30, 2.21, and 2.24, resp., for a film stored 7 days at 50° and 80% relative humidity vs. 2.08, 2.10, and 1.91, resp.; 1.70, 1.63, and 1.76, resp.; and 1.84, 1.48, and 1.60, resp., for a control containing 4-hydroxy-6-methyl-1,3,3a,7-tetraazaindene 1.50 g/mole Ag halide.
IT **23015-22-7 58089-26-2 58089-27-3**
58089-28-4
RL: USES (Uses)
(photog. color diffusion-transfer emulsions containing, for improved image d.)
RN 23015-22-7 CAPLUS
CN 5-Benzothiazolesulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)



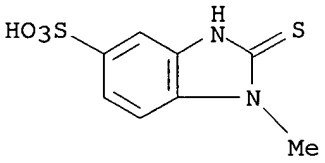
RN 58089-26-2 CAPLUS
CN 5-Benzoxazolesulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)



RN 58089-27-3 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-2-thioxo- (9CI) (CA INDEX NAME)



RN 58089-28-4 CAPLUS
CN 1H-Benzimidazole-5-sulfonic acid, 2,3-dihydro-1-methyl-2-thioxo- (9CI) (CA INDEX NAME)



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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	80.83	403.27

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-5.84	-5.84

STN INTERNATIONAL LOGOFF AT 13:47:17 ON 16 NOV 2005